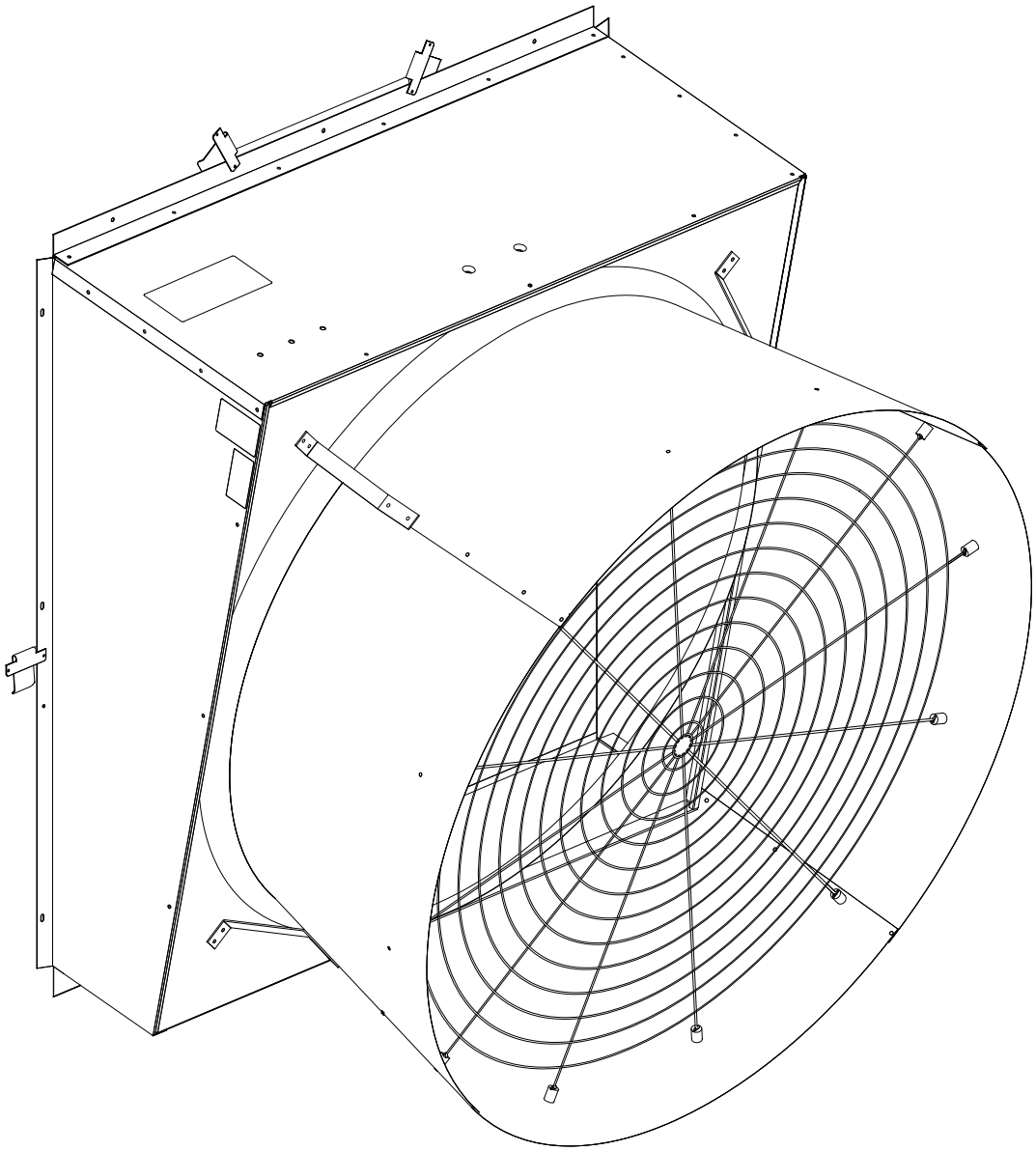
aerotech
Ventilation Systems

WF50
50" Fan

WF501TCP,Y,
WF5015TCP, Y



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USER'S MANUAL and INSTALLATION GUIDE

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THANK YOU

Thank you for purchasing an Aerotech WF Series fan. Aerotech equipment is designed to be the highest performing, highest quality equipment you can buy. With the proper installation and maintenance it will provide many years of service.

PLEASE NOTE

To achieve maximum performance and insure long life from your Aerotech fan it is essential that it be installed and maintained properly. Please read all instructions carefully before beginning installation.

WARRANTY

For Warranty claims information see the "Warranty Claims and Return Policy" form QM1021 available from the Aerotech Ventilation System, Munters Corporation office at 1-800-227-2376 or by e-mail at aerotech@munters.com.

Conditions and Limitations:

- Products and Systems involved in a warranty claim under the "Warranty Claims and Return Policy" shall have been properly installed, maintained and operated under competent supervision, according to the instructions provided by Aerotech Ventilation Systems, Munters Corporation.
- Malfunction or failure resulting from misuse, abuse, negligence, alteration, accident or lack of proper installation or maintenance shall not be considered a defect under the Warranty.

UNPACKING THE EQUIPMENT

Before beginning installation, check the overall condition of the equipment. Remove packing materials, and examine all components for signs of shipping damage. Any shipping damage is the customer's responsibility and should be reported immediately to your freight carrier.

Each Crate Includes:

1 – 50” Belt Drive Fan
4 – Cone Sections
4 – Cone Support Brackets
1 – Cone Guard
1 – Shutter
1 – Hardware Package (HP1110)

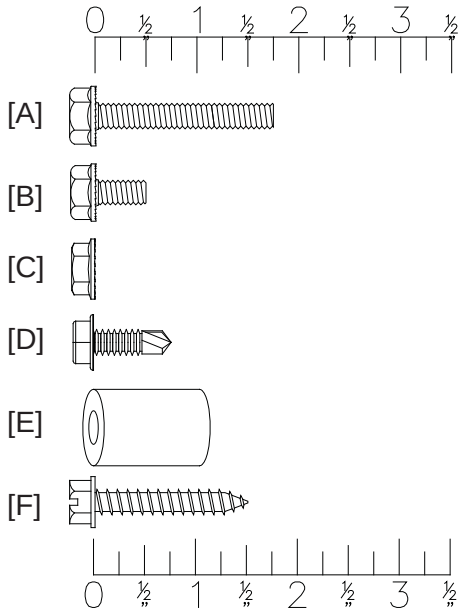
HP1110 for WF50 Fan

--Hardware for Cone Installation--

[A]….12 - ¼” x 1¾” Flange Head Bolts, ZP
[B]….16 - ¼” x ½” Flange Head Bolts, ZP
[C]….28 - ¼” Flange Nuts, ZP
[D]…...8 - ¼” x ¾” TEK Screws, ZP
[E]….12 - ¾” O.D. x 1”L. Spacers

--Hardware for Fan Installation--

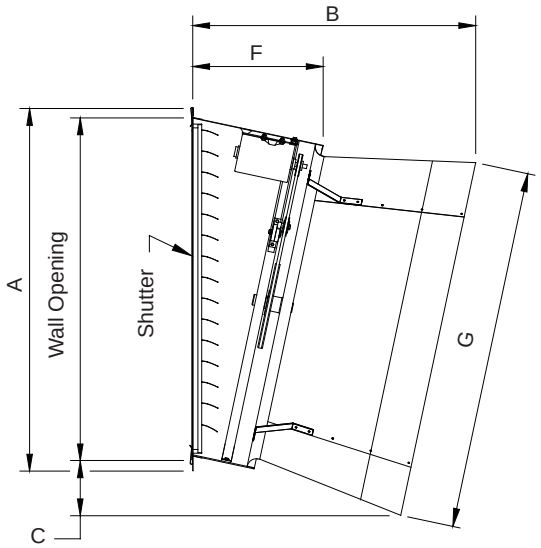
[F]….12 - ¼” x 1.5” Lag Screws, ZP

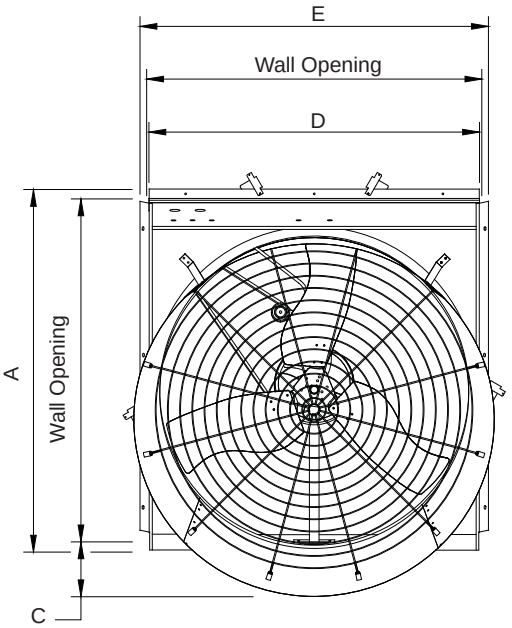


Fan Specifications: 60Hz shown (50Hz available)

Power: 120/240 VAC or 208-240/480 VAC
Phase: 1 or 3

NOTE: Crate may contain Fan Accessories.





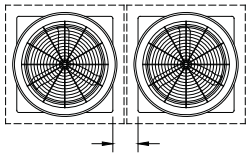
CAT. NO.	FAN DIA.	A	B	C	D	E	F	G	Wall Opening (I.D., framed)
WF50	50"	$59^{3}/_{8}$"	$46^{1}/_{2}$"	$9^{3}/_{4}$"	$54^{1}/_{8}$"	$57^{1}/_{8}$"	$21^{5}/_{16}$"	$59^{1}/_{16}$"	55"W. x $56^{1}/_{4}$"H.*

*Opening based on 2 x 4 framing. Opening size may change with framing. See Chart A page 3.

Step 1

Construct the framed opening to correct size according to the Chart A (below) and your fan size. ***See Figure 1A and Chart A.*** If fan and housing is to be framed into a 2 x 4 wall or concrete wall, ***See Figure 1A, 1B, 1C*** and ***Chart A*** for details. For greater than 4" wall thicknesses, ***See Figure 1D.***

Clearance Notes:



Fan with Discharge Cone: maintain 12" minimum clearance on all sides

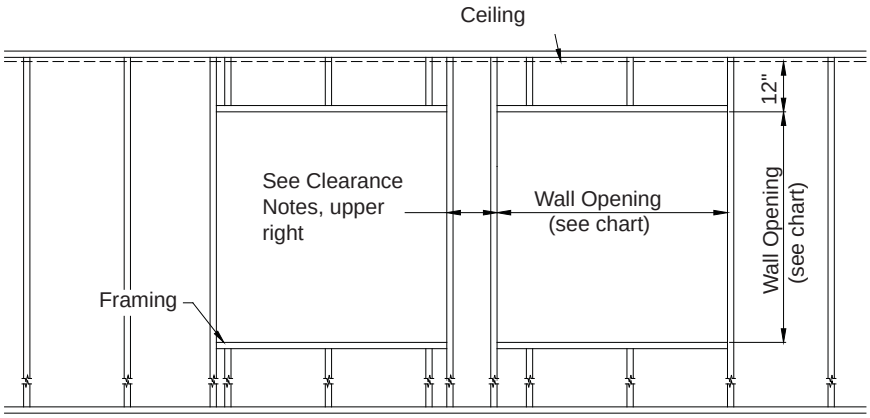


Figure 1A

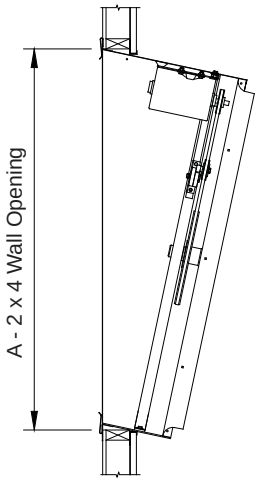


Figure 1B

2 x 4 FRAMING

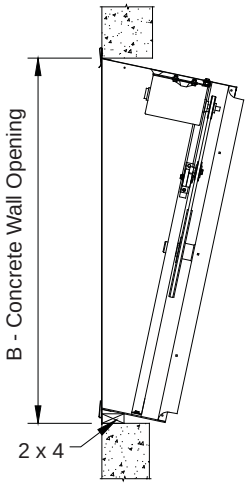


Figure 1C

CONCRETE FRAMING

Catalog No.	A 2 x 4 framing	B concrete framing
WF50	55"W. x 56 1/4"H.	55"W. x 57 3/4"H.

Chart A

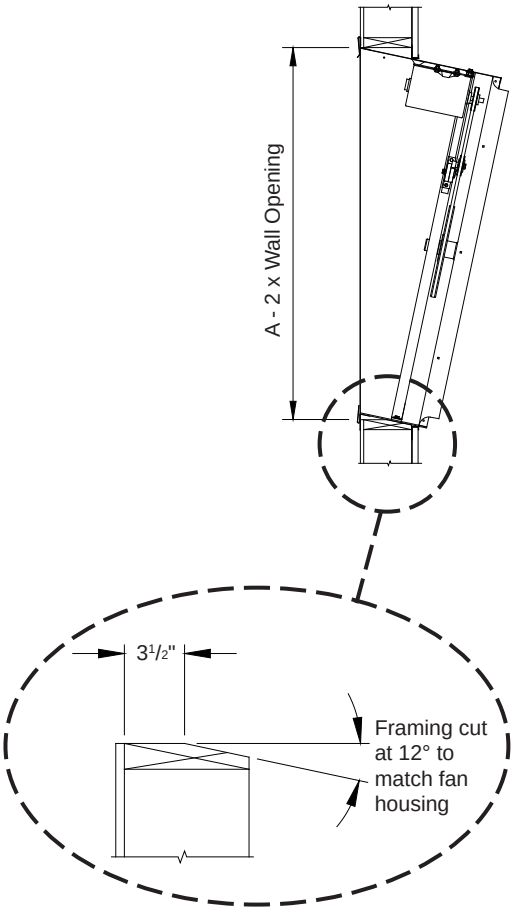


Figure 1D

GREATER THAN 4" WALL THICKNESSES

Step 2

Slide fan and housing into framed wall opening. ***See Figure 2.***

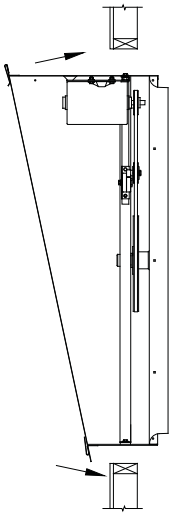


Figure 2

Step 3

Confirm that housing inside dimensions match those shown in ***Figure 3A.*** Then secure housing to wall using 12 Fastener [F], through holes in each mounting flange. ***See Figure 3B.***

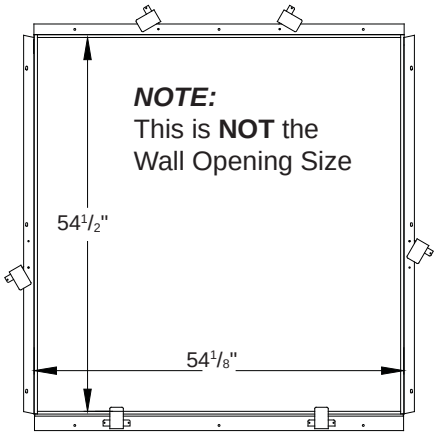


Figure 3A

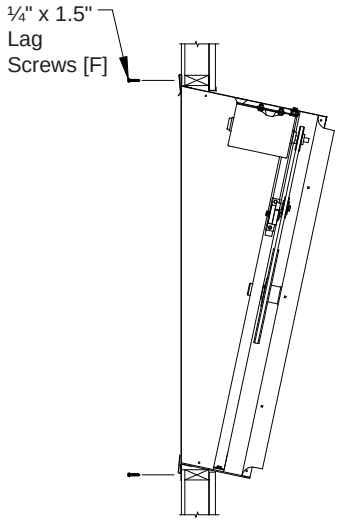


Figure 3B

Step 4

Proceed to the Installation Instructions for the Discharge Cone, Form **QM1033** for 50" fans.

Continue to Electrical Wiring section.

ELECTRICAL WIRING

⚠ WARNING

ROTATING FAN BLADES. Operation of fan without wire screens or guards may result in direct contact with blades and cause severe personal injury or death.

All wiring should be installed in accordance with National, State, and Local electrical codes. Fans used to ventilate livestock buildings or other rooms where continuous air movement is essential should be connected to individual electrical circuits, with a minimum of two circuits per room. For electrical connection requirements, refer to diagram on motor nameplate and to information enclosed with the Aerotech environmental control to be used.

Single Phase Fans: motor overload protection should be provided for each fan. A
Circuit Breaker Switch or slow blow motor type fuses must be used, ***See Figure 4A***. See Aerotech form **QM1400** for proper size.

Three Phase Fans: motor overload protection should be provided for each fan. A Circuit Breaker Switch or slow blow motor type fuses must be used, ***See Figure 4B.*** The use of a quality frequency drive and the installation of line reactors is recommended to reduce voltage spikes and harmonic distortion. Will require three pole contactors with overload protection (by others).

NOTE: *A safety cut-off switch should be located adjacent to each fan.*

NOTE:
Information in parenthesis refers to 120 VAC control.

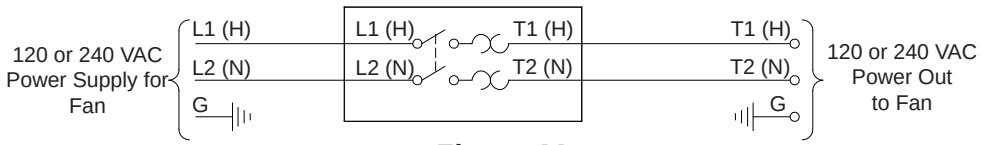


Figure 4A
Single Phase - Motor Overload Protection with Disconnect
(SY2000 or Equivalent)

KEY:
L1 = Line 1
L2 = Line 2
L3 = Line 3
H = Hot
N = Neutral
G = Ground

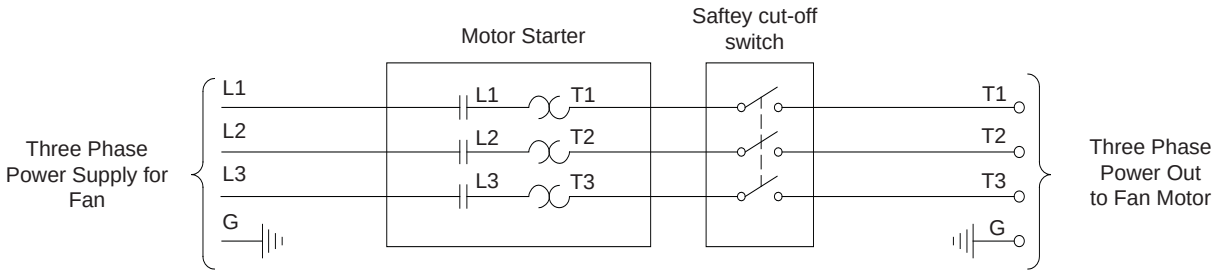


Figure 4B
Three Phase - Motor Overload Protection with Disconnect

Recommended wire routing (two options):

Step 1

As the power cable exits the back of the motor form a drip loop and then run cable through side of fan housing, through flexible conduit and into building. ***See Figure 5A and 5B.***

Step 2

As the power cable exits the back of the motor form a drip loop and then run cable up through housing and frame into wall cavity and into building. ***See Figure 6A and 6B.***

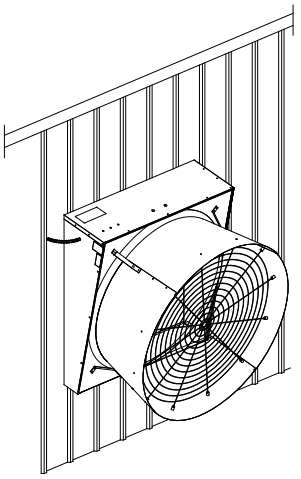


Figure 5A

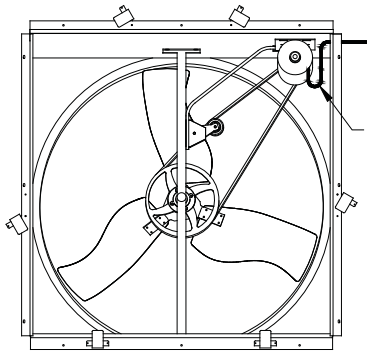


Figure 5B

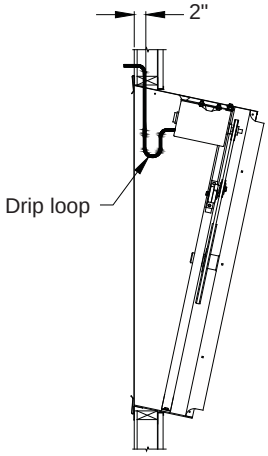


Figure 6A

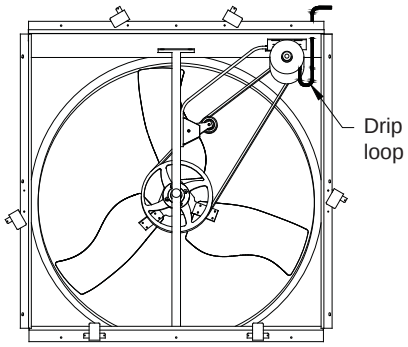


Figure 6B

Step 3

Add flashing and/or caulk around completed housing on exterior side of building wall.

Step 4

Make electrical connections to fan motor per instructions provided with fan or as shown on motor. ***See Electrical Wiring Section on page 5.***

SHUTTER INSTALLATION

Step 5

Insert shutter into fan by sliding the bottom flange of shutter into bottom shutter clips and pressing shutter inward, ***See Figure 7A.*** Fasten shutter in place by rotating the side and top shutter clips over the shutter flanges, ***See Figure 7B.***

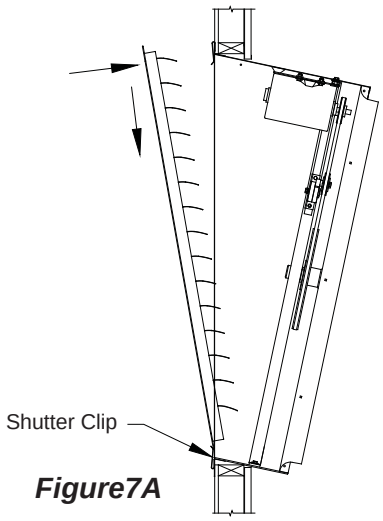


Figure7A

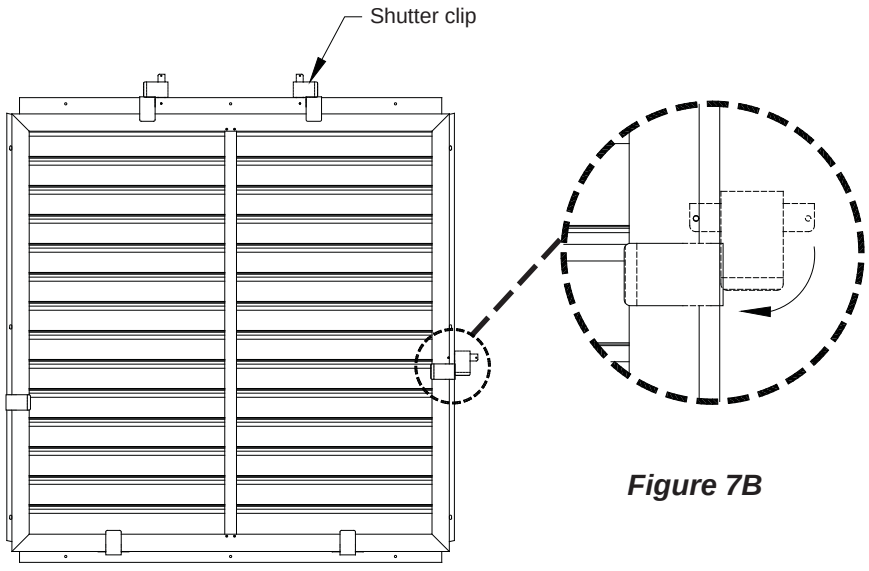


Figure 7B

OPERATION

1) INITIAL START-UP: With electrical power off, verify that the fan propeller turns freely and that all fasteners are secure. Turn on electrical power and confirm that the fan operates smoothly.

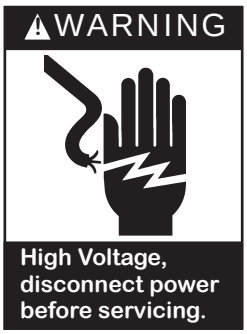
2) ADJUSTMENTS: Set the fan control to the temperature shown on your Aerotech ventilations system drawing, or to a value which will provide the desired environmental conditions.

Single Phase Fans: Single phase fans are designed for single speed operation only.

Three Phase Fans:

1) The use of a quality frequency drive and the installation of line reactors is recommended to reduce voltage spikes and harmonic distortion.
2) Minimum operating frequency of 30 Hz.
3) Will require three pole contactors with overload protection (by others).

MAINTENANCE



The following inspection and cleaning procedures should be performed monthly:

TOOLS NEEDED FOR MAINTENANCE:
wrenches: 10mm, 13mm, 16mm, 17mm, 27mm, ½", 6mm Hex

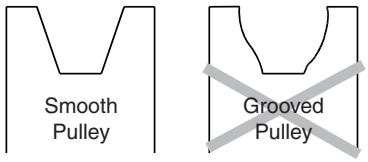
1) INSPECT PROPELLER: Check that propeller is secure on drive hub and that there are no signs of damage. The blades are of a self-cleaning design and should not require maintenance.

2) CLEAN regularly for best results:
   - FAN MOTOR: Remove any dust accumulation from motor using a brush or cloth. (DO NOT use a pressure washer). A clean motor will run cooler and last longer. At the same time, verify that the motor is secure in its mount.
   - SHUTTER: Carefully clean dust from shutter blades and frame so that shutter opens and closes freely. A brush or cloth should be used.
   - GUARD: Clean any dust or feathers from fan guards using a brush. Dirty guards can reduce airflow.

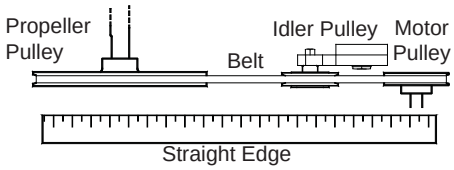
3) CHECK FASTENERS: For safety, all fasteners should be inspected. Tighten any loose connections.

4) INSPECT FAN CONTROL: With power disconnected, inspect all electrical connec-tions. Wiring should be secure and in good condition. Remove any dust build-up from control case and sensor using a soft brush or cloth. **NEVER CLEAN ELECTRICAL EQUIPMENT WITH A PRESSURE WASHER!**

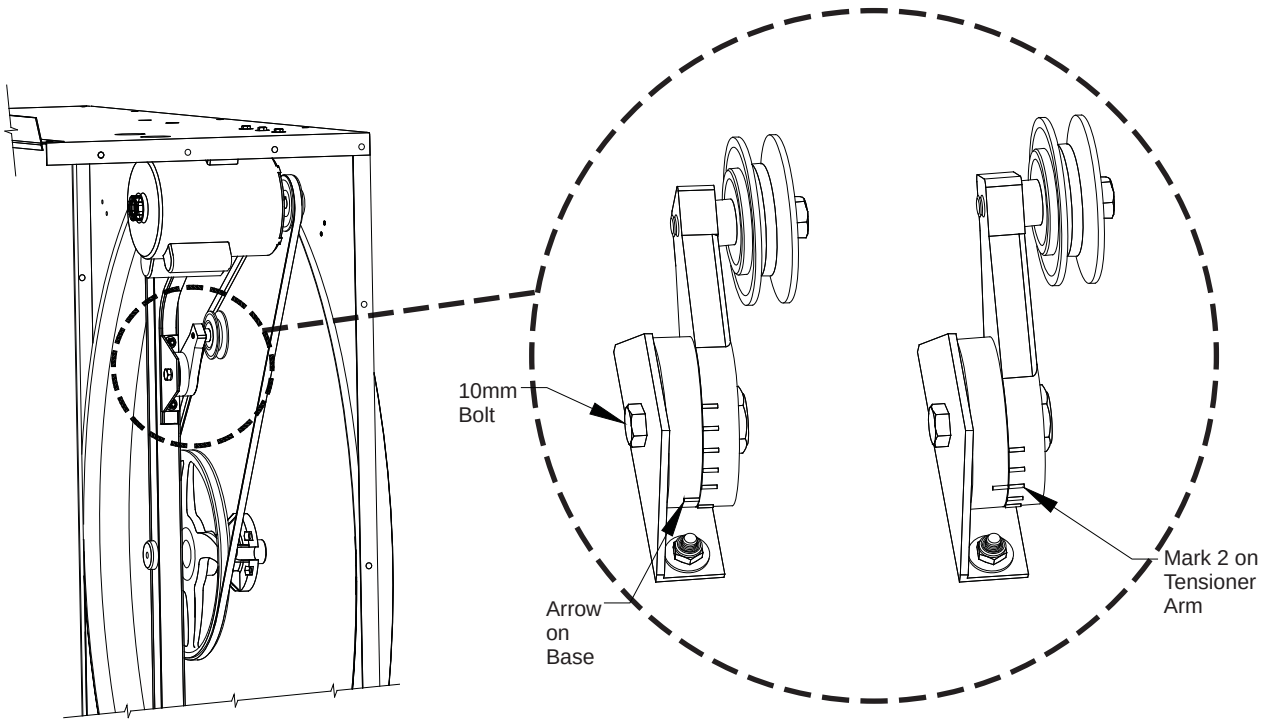
5) CHECKING PULLEYS: Roll the belt off and look at both pulleys. If the pulley has grooves in it or is no longer smooth, it needs replace ment. A loose or slipping belt will reduce fan performance up to 60% and cause premature belt failure.



6) CHECK DRIVE ALIGNMENT:
Check alignment of belt on idler pulley, it should be centered on the idler pulley. The belt tensioner's idler pulley and propeller pulley are fixed in position, therefore, alignment must be obtained by adjusting the motor and propeller pulleys. If an adjustment is needed, remove the belt, then loosen the set screws in the pulley and move as necessary to achieve proper alignment. Remember to tighten the pulley set screws after making an adjustment. Drive alignment is very important for long belt life and proper operation.



7) BELT TIGHTENING:
To adjust the belt tensioner to the proper setting, loosen 10 mm bolt (using 16mm or 17mm end wrench) to allow tensioner arm to rotate. Working from inlet/motor side of fan, place a 27 mm (1$\frac{1}{16}$") wrench onto the hex on the tensioner. Turn wrench clockwise until the single mark on base of the belt tensioner is aligned with mark 2 on the tensioner arm. Hold tensioner at this setting and tighten the 10mm bolt to 40 ft.-lbs torque



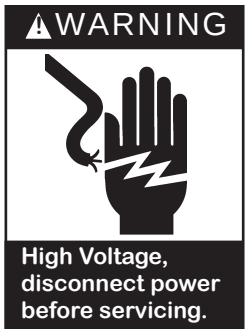
WINTERIZING FAN

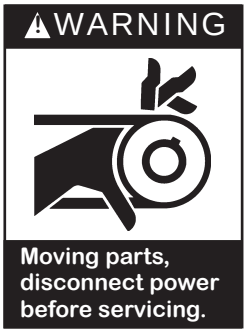
In most climates, it is probable that the ventilation system will never need to operate at a total capacity during the colder winter months. Consequently, it is advisable to "winterize" those fans which will not be used in cold weather to avoid unnecessary heat loss and condensation.

To winterize, turn fan control "off" and install an insulated closure panel over the fan intake. If you don't have an insulated closure panel, a piece of rigid insulation material can be used. **Remember the insulation panel must be removed before warmer weather returns.**

NOTE: At least one single speed fan should be left uncovered and with power available to provide air movement in the event of variable speed control difficulties.

TROUBLE SHOOTING

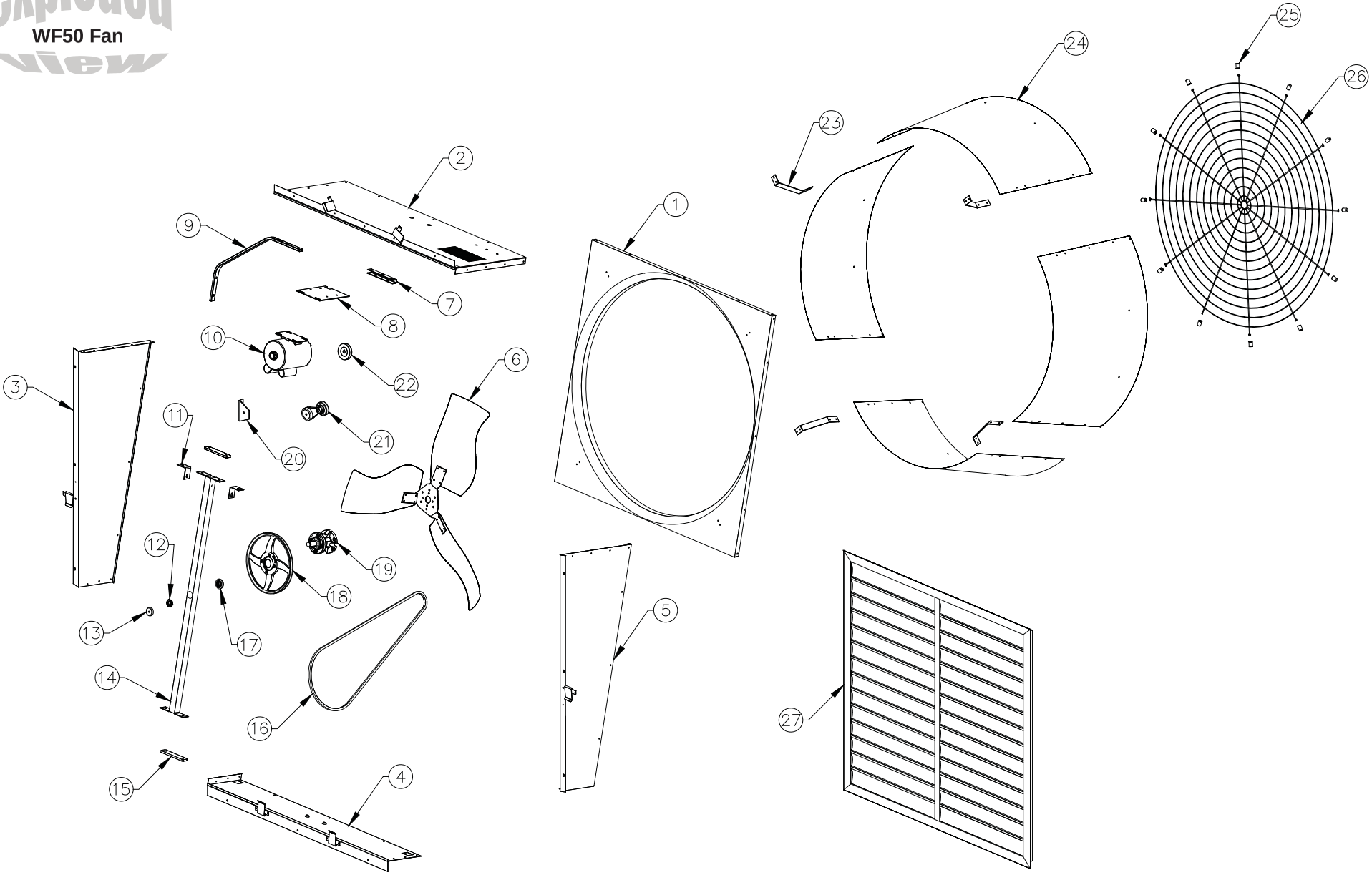




SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
Fan Not Operating	1. Fan control set above room temperature 2. Blown fuse or open circuit breaker 3. Propeller blade contacting fan housing 4. Fan control defective 5. Motor defective	1. Set to a lower temperature 2. Replace fuse or reset breaker 3. Realign propeller in fan housing 4. Repair or replace control 5. Repair or replace motor
Fan Operating-Insufficient Airflow	1. Shutter jammed 2. Guard dirty 3. Incorrect Belt Tension 4. Worn pulleys.	1. Clean shutter & fan housing 2. Clean guard 3. See Maintenance Section. 4. See Maintenance Section.
Excessive Fan Noise	1. Propeller blade contacting fan panel 2. Motor bearing defective	1. Realign propeller in fan housing 2. Repair or replace motor
Excessive Fan Vibration	1. Motor loose in mount 2. Propeller damaged 3. Motor shaft bent	1. Tighten fasteners 2. Replace propeller 3. Repair or replace motor
Fan Never Turns Off	1. Override thermostat set incorrectly 2. Control set for continuous operation	1. Set to the correct temperature 2. Set speed control correctly

exploded view

WF50 Fan



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Item	Cat. No.	Part Name/Description	Qty.
1	FH1951	Orifice panel, galvanized	1
2	FH2919	Top housing panel, galvanized, with shutter clips	1
3	FH2920	Left side housing panel, galvanized, with shutter clips	1
4	FH2918	Bottom housing panel, galvanized, with shutter clip	1
5	FH2921	Right side panel of housing, galvanized, with shutter clip	1
6	FP2548	Prop assembly, 3-blade, SS, 25mm	1
	FP2549	Prop assembly, 3-blade, galvanized	1
7	FH2429	Support Bracket for motor mounting plate, galvanized	1
8	FH2427	Mounting Plate for NEMA 56 motor	1
9	FH2428	Center support brace for Strut, galvanized	2
10	FM1024*	Motor, 1HP, 1725 RPM, 56Fr., 1ph, 120/240	1
11	FH1302	Reinforced Brackets for Strut, galvanized	2
12	KN1860	Hex nut, M25x10mm, zinc plated	1
13	KX1208	Cover plastic	1
14	FH1930	Strut, galvanized	1
15	FH1932	Spacer plate, plastic	2
16	FH1505*	V-belt, 87" A-section (A85), polyestar	1
17	KX1130	Bushing, aluminum	1
18	FH2137*	Propeller sheave, aluminum	1
19	FP2060	Hub with bearing and shaft	1
20	FH2504	Mounting bracket for belt tensioner	1
21	FH2402	Belt tensioner assembly with 3" idler pulley	1
	FH2406	3" idler pulley only, with bolt	1
	FH2419	Tensioner arm only, aluminum	1
22	FH2138*	Motor Sheave AK35x5/8" bore with keyseat, CI	1
23	FH2130	Cone support bracket, GC type, galvanized	4
24	FH4250	Discharge cone (1 section), galvanized	4
25	KX1256	Spacer 0.32 ID x 3/4" OD. x 1.0"L, black NY	12
26	FH2648	Guard, pvc coated	1
27	PZ48 or GS48 or SW54	Shutter, 53 7/8", all plastic or aluminum	1

* Parts listed are for standard configuration with 1HP motor and other drive components operating on 60Hz power. Contact office for other replacement motors.